

National Survey of Blood Pressure and Heart Diseases in Japan

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THE LEADING causes of death in Japan changed greatly after World War II. Deaths from infectious diseases such as tuberculosis decreased drastically, and deaths attributed to chronic diseases such as vascular lesions affecting the central nervous system and heart diseases gradually increased. These diseases now head the list of causes and account for one-third of all mortality in Japan (1). Therefore, vascular lesions and heart diseases are of major concern to public health officials in Japan.

Clinicians and epidemiologists have conducted studies in Japan of vascular lesions affecting the central nervous system and heart diseases. The study populations, however, were generally small or were specially selected. Furthermore, the methods and techniques used differed from one study to another.

Therefore in order to gauge the prevalence of these diseases in Japan by well-defined techniques, it was necessary for the National Ministry of Health and Welfare to undertake a national survey. A special expert committee, consisting of clinicians and health administrators, was named to plan the survey and choose the standardized methods and techniques to be used. These were based on WHO recommendations (2) and others. The committee also in-

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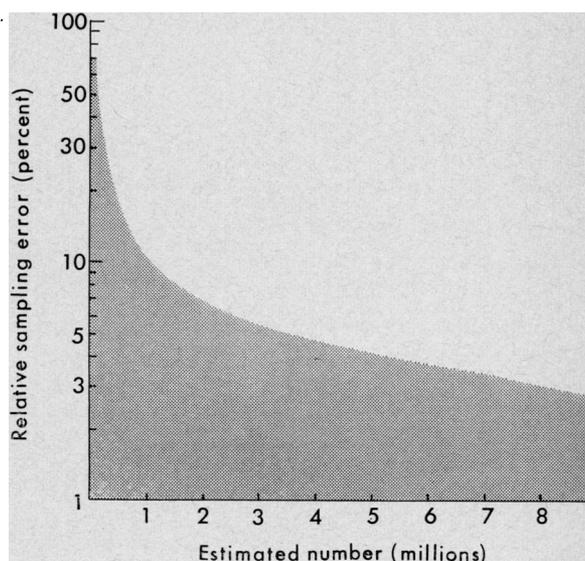
structed the technicians in these techniques and emphasized the importance of using uniform methods.

The results of the survey were outlined at the Japanese Public Health Assembly in 1963 in Yokohama. This paper deals with only a portion of the detailed data the survey yielded.

Survey Design

The survey was held at the end of October 1962 under the auspices of the Health Statistics Section, Ministry of Health and Welfare, the government of each prefecture, and prefectural medical associations. The chief and staff of district health centers in the survey sample conducted the survey in their areas. (Japan has

Figure 1. Approximate value of sampling error



about 800 district health centers operated by the 46 prefectural governments. Each has a staff of approximately 30 persons and serves about 100,000 persons or an area of 460 square kilometers.)

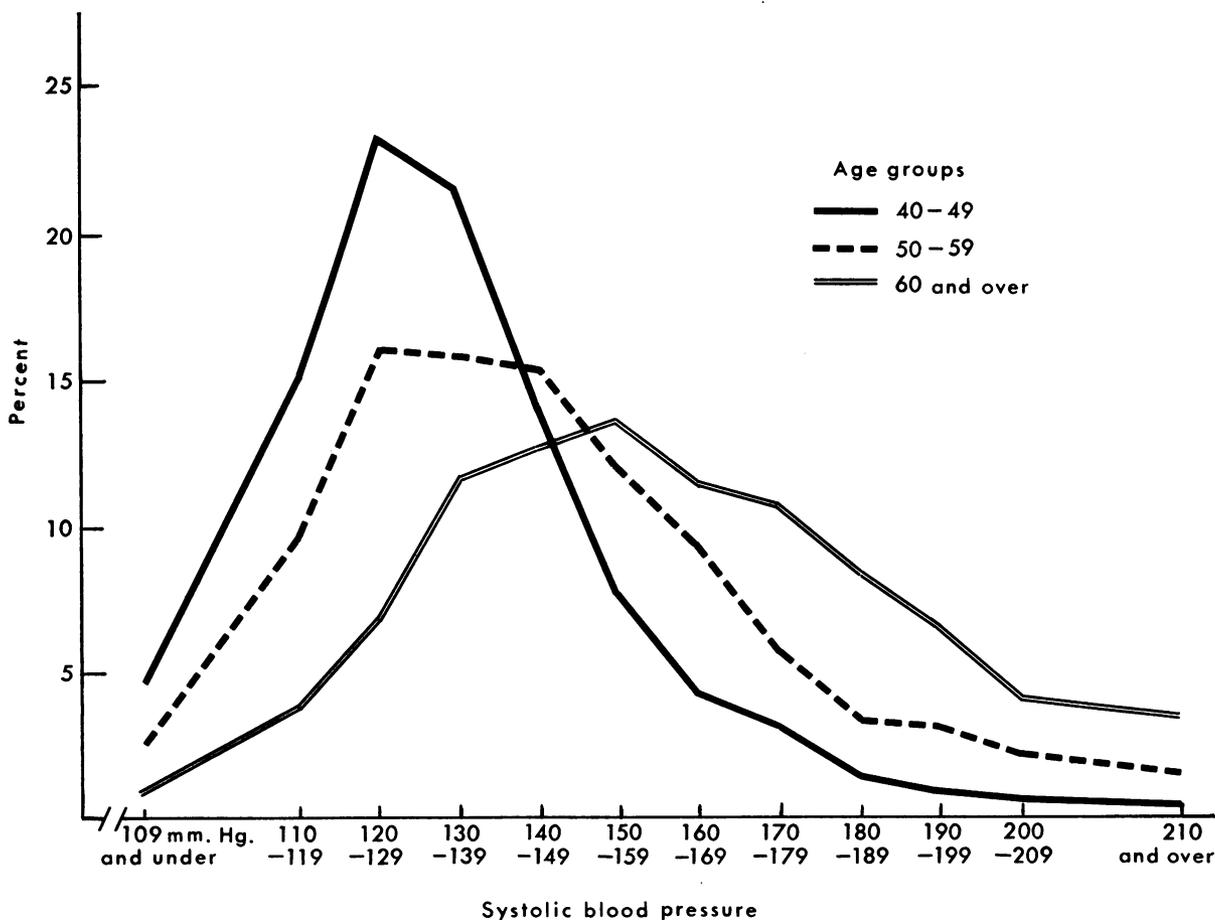
For the survey, a sample of about 7,000 persons more than 40 years of age (1/4,000 of all Japanese over 40 years) was selected by stratified 2-stage sampling. In the first stage the 3,600 administrative units (city, ward, town, or village) in Japan were grouped into 38 strata by population size and district. One unit was chosen from each stratum with a probability proportional to size. In the second stage 114 census areas were selected at random from these 38 units. An average census area contains

about 50 households and a population of 150 to 250. There are about 420,000 census areas in Japan.

The health centers notified persons in the sample that they had been selected for interview. Blood pressure measurements, electrocardiograms, urine protein tests (men only), auscultation, general inspection, and oral questioning of all respondents comprised the survey.

Before blood pressure was measured, all respondents rested for at least 5 minutes in a sitting position. Readings were taken on the right arm with the subjects in a sitting position, using a Riva-Rocci sphygmomanometer in the usual fashion. The point of disappearance of the sound was taken as the diastolic pressure. The

Figure 2. Distribution of systolic blood pressure values, national survey, Japan, 1962

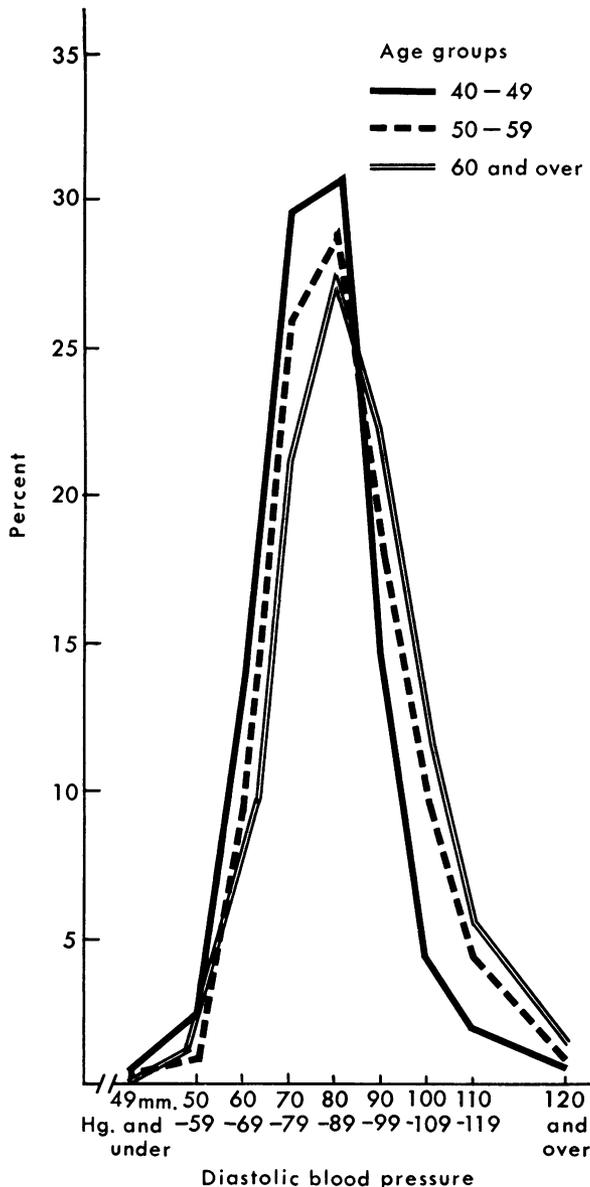


| Age group | Number of respondents | Mean value (mm. Hg.) |
|-------------|-----------------------|----------------------|
| 40-49 | 2,167 | 134.8 |
| 50-59 | 1,833 | 146.5 |
| 60 and over | 1,912 | 162.6 |

room temperature was kept at over 59° F. In taking the electrocardiograms, the conventional 12 leads were used. In the urine protein test the sulfosalicylic acid method was used.

The examining physicians and nurses completed a record for each person examined. The name, sex, birth date, occupation, present dis-

Figure 3. Distribution of diastolic blood pressure values, national survey, Japan, 1962



| Age group | Number of respondents | Mean value (mm. Hg.) |
|-------------|-----------------------|----------------------|
| 40-49 | 2,167 | 82.0 |
| 50-59 | 1,833 | 86.1 |
| 60 and over | 1,912 | 88.6 |

eases, and subjective symptoms were recorded, as well as findings from the general inspection, auscultation, electrocardiogram, and the urine protein test. The blood pressure and pulse rate were recorded, together with any evidence of edema and any diagnosis or treatment. A duplicate tracing of each electrocardiogram was prepared. The district health centers forwarded all records to the expert committee who reviewed them and carefully re-evaluated the electrocardiograms.

Results

Rate of response. A total of 5,912 persons were examined; the rate of response was 78.8 percent for the men and 86.1 percent for the women. The examined group was very similar in age composition to the estimated 1962 population of those over 40 years in Japan. Judging from their medical histories, the nonrespondents were not characteristic of the general population.

Estimation and sampling error. Population values were estimated by the ratio method. If x denotes the number of persons examined who had a given characteristic and y the total number of respondents, the estimated total population with the characteristic is obtained by the following formula:

$$X_r = \frac{x}{y} Y.$$

Y is 27,109,000, the 1962 population of those over 40 in Japan, a total supplied by the Statistics Bureau of Japan. Figure 1 shows the approximate value of the sampling error.

Blood pressure. The mean systolic and diastolic blood pressure increases with age. For the population over 40 years, the systolic mean was 148.2 ± 28.3 mm. Hg. for males and 146.9 ± 30.3 mm. Hg. for females. The mean value of diastolic blood pressure was 86.4 ± 15.7 mm. Hg. for men and 84.7 ± 15.2 mm. Hg. for women.

The systolic mode moved to higher pressures with increasing age (fig. 2); for the age span as a whole it was in the interval 130-139 mm. Hg. for both men and women (3,4). A definition of hypertension is not yet decided for the Japanese population, but persons with systolic values of more than 150 mm. Hg. are considered to require medical attention.

Table 1. Correlation between systolic and diastolic pressures, national survey, Japan, 1962

| Systolic pressure (mm. Hg.) | Total | Diastolic pressure (mm. Hg.) | | | | | | | | |
|--------------------------------|--------|------------------------------|-------|-------|--------|--------|--------|---------|---------|-----------------|
| | | Under 50 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | 100-109 | 110-119 | 120 and over |
| Total | | | | | | | | | | |
| Total..... | 5, 912 | 22 | 102 | 626 | 1, 520 | 1, 717 | 1, 085 | 485 | 237 | 118 |
| Under 110..... | 254 | 5 | 33 | 110 | 87 | 19 | ----- | ----- | ----- | ----- |
| 110-119..... | 592 | 5 | 28 | 184 | 293 | 77 | 4 | 1 | ----- | ----- |
| 120-129..... | 937 | 4 | 18 | 153 | 400 | 327 | 33 | 2 | ----- | ----- |
| 130-139..... | 977 | 3 | 12 | 89 | 349 | 405 | 112 | 7 | ----- | ----- |
| 140-149..... | 833 | ----- | 7 | 46 | 189 | 368 | 192 | 24 | 6 | 1 |
| 150-159..... | 655 | 1 | 1 | 22 | 100 | 216 | 242 | 61 | 12 | ----- |
| 160-169..... | 490 | 1 | 1 | 12 | 47 | 138 | 195 | 69 | 22 | 5 |
| 170-179..... | 379 | 2 | 1 | 6 | 33 | 66 | 131 | 97 | 38 | 5 |
| 180-189..... | 263 | ----- | ----- | ----- | 6 | 45 | 78 | 81 | 36 | 17 |
| 190-199..... | 206 | 1 | ----- | ----- | 11 | 31 | 42 | 65 | 39 | 17 |
| 200-209..... | 128 | ----- | 1 | 3 | 1 | 16 | 23 | 41 | 32 | 11 |
| 210 and over..... | 198 | ----- | ----- | 1 | 4 | 9 | 33 | 37 | 52 | 62 |
| Male | | | | | | | | | | |
| Total..... | 2, 578 | 11 | 34 | 249 | 638 | 743 | 489 | 234 | 122 | 58 |
| Under 110..... | 100 | 3 | 9 | 36 | 41 | 11 | ----- | ----- | ----- | ----- |
| 110-119..... | 235 | 2 | 7 | 68 | 120 | 36 | 2 | ----- | ----- | ----- |
| 120-129..... | 411 | 2 | 8 | 63 | 179 | 144 | 13 | 2 | ----- | ----- |
| 130-139..... | 436 | 1 | 6 | 43 | 146 | 170 | 65 | 5 | ----- | ----- |
| 140-149..... | 359 | ----- | 3 | 19 | 69 | 163 | 89 | 13 | 3 | ----- |
| 150-159..... | 301 | 1 | ----- | 12 | 39 | 97 | 109 | 35 | 8 | ----- |
| 160-169..... | 211 | 1 | ----- | 3 | 21 | 53 | 82 | 36 | 12 | 3 |
| 170-179..... | 164 | ----- | ----- | 4 | 13 | 25 | 55 | 42 | 22 | 3 |
| 180-189..... | 119 | ----- | ----- | ----- | 3 | 21 | 35 | 36 | 16 | 8 |
| 190-199..... | 93 | 1 | ----- | ----- | 5 | 12 | 17 | 31 | 20 | 7 |
| 200-209..... | 61 | ----- | 1 | ----- | 7 | 10 | 10 | 22 | 18 | 3 |
| 210 and over..... | 88 | ----- | ----- | 1 | 2 | 4 | 12 | 12 | 23 | 34 |
| Female | | | | | | | | | | |
| Total..... | 3, 334 | 11 | 68 | 377 | 882 | 974 | 596 | 251 | 115 | 60 |
| Under 110..... | 154 | 2 | 24 | 74 | 46 | 8 | ----- | ----- | ----- | ----- |
| 110-119..... | 357 | 3 | 21 | 116 | 173 | 41 | 2 | 1 | ----- | ----- |
| 120-129..... | 526 | 2 | 10 | 90 | 221 | 183 | 20 | ----- | ----- | ----- |
| 130-139..... | 541 | 2 | 6 | 46 | 203 | 235 | 47 | 2 | ----- | ----- |
| 140-149..... | 474 | ----- | 4 | 27 | 120 | 205 | 103 | 11 | 3 | 1 |
| 150-159..... | 354 | ----- | 1 | 10 | 61 | 119 | 133 | 26 | 4 | ----- |
| 160-169..... | 279 | ----- | 1 | 9 | 26 | 85 | 113 | 33 | 10 | 2 |
| 170-179..... | 215 | 2 | 1 | 2 | 20 | 41 | 76 | 55 | 16 | 2 |
| 180-189..... | 144 | ----- | ----- | ----- | 3 | 24 | 43 | 45 | 20 | 9 |
| 190-199..... | 113 | ----- | ----- | ----- | 6 | 19 | 25 | 34 | 19 | 10 |
| 200-209..... | 67 | ----- | ----- | 3 | 1 | 9 | 13 | 19 | 14 | 8 |
| 210 and over..... | 110 | ----- | ----- | ----- | 2 | 5 | 21 | 25 | 29 | 28 |

NOTE: $r = +0.700$.

Of the 5,912 persons in the study group, 39.2 percent had readings of more than 150 mm. Hg. systolic pressure. By age group, the percentage with such readings were 18.6 percent of those 40-49 years, 38.6 percent for the 50-59 year age group, and 63.1 percent of those 60 years and older.

The mode for diastolic blood pressure was in the interval 80-89 mm. Hg. for both men and women. The mode for diastolic pressure does not change with age as does the systolic mode (fig. 3). In Japan physicians consider dia-

stolic readings above 90 mm. Hg. as hypertensive.

A total of 32.6 percent of those in the study group had diastolic readings above 90 mm. Hg.; by age group, 22.7 percent of those 40-49 years, 34.2 percent of those 50-59 years, and 42.2 percent of those 60 years or older.

Correlation. The correlation coefficient (r) between the systolic and diastolic pressures was +0.700 and there were no sex differences. Table 1 reveals that 26.1 percent of the examinees had both a systolic reading above 150 mm. Hg. and

Table 2. Electrocardiographic screening results, national survey, Japan 1962

| ECG groups ¹ | Total | Age group (years) | | | | | | |
|--|--------|-------------------|--------|-------|-------|-------|-------|-------------------|
| | | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 years and over |
| Total..... | 5, 803 | 1, 105 | 1, 035 | 996 | 822 | 714 | 491 | 640 |
| 1. Normal..... | 2, 684 | 621 | 560 | 478 | 383 | 284 | 175 | 183 |
| 2. Suspect..... | 2, 587 | 427 | 432 | 466 | 377 | 335 | 246 | 304 |
| 3. Disorder..... | 493 | 47 | 40 | 49 | 60 | 83 | 67 | 147 |
| a. Myocardial infarction..... | 31 | 2 | 4 | 1 | 4 | 5 | 5 | 10 |
| b. Myocardial damage..... | 250 | 22 | 25 | 32 | 35 | 41 | 33 | 62 |
| c. Atrial fibrillation and flutter..... | 36 | 2 | 2 | 1 | 3 | 9 | 4 | 15 |
| d. Atrioventricular block..... | 99 | 14 | 6 | 10 | 8 | 12 | 13 | 36 |
| e. Complete right bundle branch-block..... | 77 | 7 | 3 | 5 | 10 | 16 | 12 | 24 |
| 4. Undeterminable..... | 39 | 10 | 3 | 3 | 2 | 12 | 3 | 6 |
| Male | | | | | | | | |
| Total..... | 2, 530 | 443 | 437 | 442 | 364 | 334 | 238 | 272 |
| 1. Normal..... | 1, 129 | 221 | 224 | 220 | 170 | 130 | 91 | 73 |
| 2. Suspect..... | 1, 167 | 198 | 194 | 202 | 168 | 152 | 121 | 132 |
| 3. Disorder..... | 216 | 20 | 18 | 18 | 25 | 47 | 25 | 63 |
| a. Myocardial infarction..... | 17 | 2 | 2 | 1 | 3 | 4 | 2 | 3 |
| b. Myocardial damage..... | 75 | 4 | 8 | 9 | 9 | 19 | 10 | 16 |
| c. Atrial fibrillation and flutter..... | 20 | 2 | 2 | 2 | 4 | 4 | 2 | 10 |
| d. Atrioventricular block..... | 55 | 10 | 3 | 7 | 2 | 9 | 7 | 17 |
| e. Complete right bundle branch-block..... | 49 | 4 | 3 | 1 | 9 | 11 | 4 | 17 |
| 4. Undeterminable..... | 18 | 4 | 1 | 2 | 1 | 5 | 1 | 4 |
| Female | | | | | | | | |
| Total..... | 3, 273 | 662 | 598 | 554 | 458 | 380 | 253 | 368 |
| 1. Normal..... | 1, 555 | 400 | 336 | 258 | 213 | 154 | 84 | 110 |
| 2. Suspect..... | 1, 420 | 229 | 238 | 264 | 209 | 183 | 125 | 172 |
| 3. Disorder..... | 277 | 27 | 22 | 31 | 35 | 36 | 42 | 84 |
| a. Myocardial infarction..... | 14 | 2 | 2 | 1 | 1 | 1 | 3 | 7 |
| b. Myocardial damage..... | 175 | 18 | 17 | 23 | 26 | 22 | 23 | 46 |
| c. Atrial fibrillation and flutter..... | 16 | 2 | 2 | 1 | 1 | 5 | 2 | 5 |
| d. Atrioventricular block..... | 44 | 4 | 3 | 3 | 6 | 3 | 6 | 19 |
| e. Complete right bundle branch-block..... | 28 | 3 | 2 | 4 | 1 | 5 | 8 | 7 |
| 4. Undeterminable..... | 21 | 6 | 2 | 1 | 1 | 7 | 2 | 2 |

¹ See text for complete definitions.

a diastolic reading above 90 mm. Hg., with the percentages increasing with age. On the other hand, 54.3 percent of the group had both a systolic reading less than 150 mm. Hg. and a diastolic reading of less than 90 mm. Hg., and this percentage decreased with increasing age.

Urine protein test. For the test, which was given only to males, the rate of positives was 10.8 percent. Men with blood pressure readings above 150 mm. Hg. had a higher positive rate, 15.8 percent, and there was a higher rate also (16.5 percent), for those with diastolic readings about 90 mm. Hg.

Electrocardiographic findings. The special

expert committee prepared a table based on the Minnesota Code for classifying electrocardiograms. The following four classes were set up:

1. Normal group.
2. Suspect group. High voltage, ST segment depression ≥ 0.05 to 0.1 millivolt, flat T, incomplete right bundle-branch block, PQ-interval prolongation, abnormal P, slight arrhythmia (occasional extra systole, tachycardia, bradycardia), and other (W-P-W, QT-interval prolongation, and so forth).
3. Disorder group.
 - a. Myocardial infarction
 - b. Myocardial damage (ST segment depres-

Figure 4. Relationship between ECG disorders rate and blood pressure values, national survey, Japan, 1962

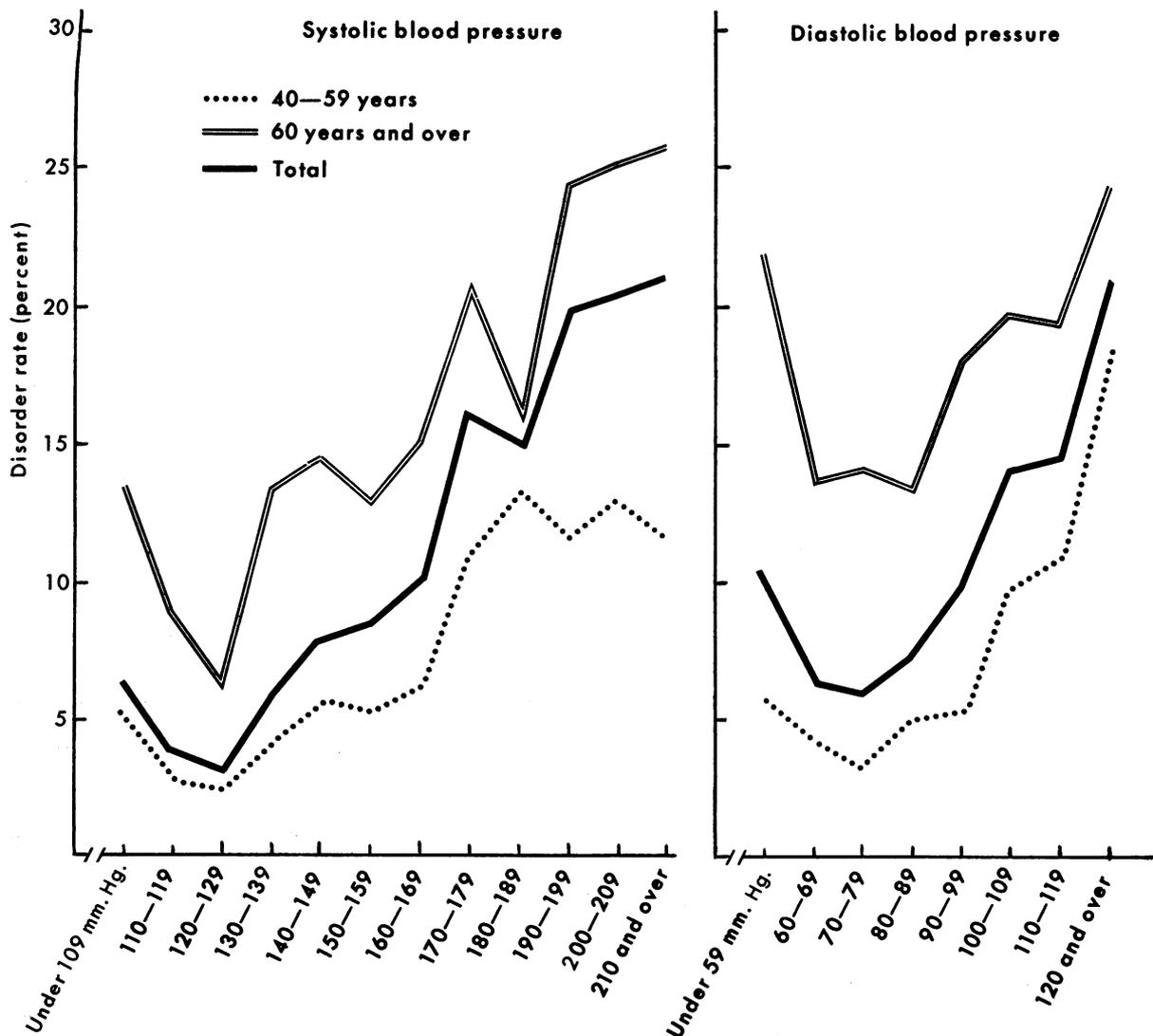


Table 3. Results of electrocardio grams by systolic pressure readings

| Systolic pressure (mm. Hg.) | Total | ECG group ¹ | | | | | | | | 4 |
|-----------------------------|--------|------------------------|--------|-------|-------|-------|-------|-------|-------|-------|
| | | 1 | 2 | 3 | | | | | | |
| | | | | Total | a | b | c | d | e | |
| Total | | | | | | | | | | |
| Total..... | 5, 803 | 2, 684 | 2, 587 | 493 | 31 | 250 | 36 | 99 | 77 | 39 |
| Under 110..... | 252 | 151 | 82 | 16 | 1 | 10 | 2 | 3 | ----- | 3 |
| 110-119..... | 587 | 380 | 183 | 22 | 1 | 9 | 6 | 5 | 1 | 2 |
| 120-129..... | 927 | 530 | 361 | 29 | 2 | 8 | 2 | 10 | 7 | 7 |
| 130-139..... | 960 | 525 | 373 | 57 | 4 | 20 | 7 | 15 | 11 | 5 |
| 140-149..... | 814 | 395 | 350 | 64 | 4 | 30 | 2 | 19 | 9 | 5 |
| 150-159..... | 639 | 274 | 309 | 53 | 4 | 26 | 2 | 6 | 15 | 3 |
| 160-169..... | 483 | 175 | 254 | 49 | 2 | 27 | 4 | 5 | 11 | 5 |
| 170-179..... | 367 | 100 | 205 | 59 | 5 | 29 | 5 | 15 | 5 | 3 |
| 180-189..... | 254 | 62 | 153 | 38 | 2 | 19 | 2 | 9 | 6 | 1 |
| 190-199..... | 203 | 52 | 109 | 40 | 1 | 26 | 1 | 7 | 5 | 2 |
| 200-209..... | 123 | 22 | 74 | 25 | 1 | 16 | 1 | 4 | 3 | 2 |
| 210 and over..... | 194 | 18 | 134 | 41 | 4 | 30 | 2 | 1 | 4 | 1 |
| Male | | | | | | | | | | |
| Total..... | 2, 530 | 1, 129 | 1, 167 | 216 | 17 | 75 | 20 | 55 | 49 | 18 |
| Under 110..... | 99 | 57 | 35 | 7 | 1 | 3 | 1 | 2 | ----- | ----- |
| 110-119..... | 232 | 144 | 80 | 8 | 1 | ----- | 4 | 2 | 1 | ----- |
| 120-129..... | 407 | 232 | 156 | 15 | 1 | 2 | 1 | 8 | 3 | 4 |
| 130-139..... | 431 | 226 | 174 | 27 | 2 | 5 | 3 | 10 | 7 | 4 |
| 140-149..... | 349 | 156 | 167 | 23 | 1 | 5 | 1 | 10 | 6 | 3 |
| 150-159..... | 295 | 131 | 137 | 26 | 2 | 10 | 1 | 2 | 11 | 1 |
| 160-169..... | 206 | 79 | 104 | 21 | 1 | 7 | 2 | 3 | 8 | 2 |
| 170-179..... | 157 | 40 | 94 | 21 | 2 | 8 | 2 | 6 | 3 | 2 |
| 180-189..... | 117 | 28 | 70 | 18 | 1 | 8 | 1 | 4 | 4 | 1 |
| 190-199..... | 92 | 23 | 52 | 17 | ----- | 9 | 1 | 5 | 2 | ----- |
| 200-209..... | 58 | 7 | 40 | 10 | 1 | 3 | 1 | 3 | 2 | 1 |
| 210 and over..... | 87 | 6 | 58 | 23 | 4 | 15 | 2 | ----- | 2 | ----- |
| Female | | | | | | | | | | |
| Total..... | 3, 273 | 1, 555 | 1, 420 | 277 | 14 | 175 | 16 | 44 | 28 | 21 |
| Under 110..... | 153 | 94 | 47 | 9 | ----- | 7 | 1 | 1 | ----- | 3 |
| 110-119..... | 355 | 236 | 103 | 14 | ----- | 9 | 2 | 3 | ----- | 2 |
| 120-129..... | 520 | 298 | 205 | 14 | 1 | 6 | 1 | 2 | 4 | 3 |
| 130-139..... | 529 | 299 | 199 | 30 | 2 | 15 | 4 | 5 | 4 | 1 |
| 140-149..... | 465 | 239 | 183 | 41 | 3 | 25 | 1 | 9 | 3 | 2 |
| 150-159..... | 344 | 143 | 172 | 27 | 2 | 16 | 1 | 4 | 4 | 2 |
| 160-169..... | 277 | 96 | 150 | 28 | 1 | 20 | 2 | 2 | 3 | 3 |
| 170-179..... | 210 | 60 | 111 | 38 | 3 | 21 | 3 | 9 | 2 | 1 |
| 180-189..... | 137 | 34 | 83 | 20 | 1 | 11 | 1 | 5 | 2 | ----- |
| 190-199..... | 111 | 29 | 57 | 23 | 1 | 17 | ----- | 2 | 3 | 2 |
| 200-209..... | 65 | 15 | 34 | 15 | ----- | 13 | ----- | 1 | 1 | 1 |
| 210 and over..... | 107 | 12 | 76 | 18 | ----- | 15 | ----- | 1 | 2 | 1 |

¹ See text for definitions of groups.

sion ≥ 0.1 millivolt, negative T), inverted T, or complete left bundle-branch block.

c. Atrial fibrillation and flutter

d. Atrioventricular block or other prominent arrhythmia

e. Complete right bundle-branch block

4. Undeterminable group.

Electrocardiograms were taken of 5,803 persons, with 46.3 percent of these classified as

group 1, 44.6 percent as group 2, and 8.5 percent in the disorder category, group 3. No ECG's were taken on 109 persons.

The percentage of those in the normal group 1 decreased with increasing age, and group 2 (suspect) increased slightly with increasing age among both sexes (table 2). The proportions of those in group 3 (disorder) were about the same for men and women. At 40-49 years,

Table 4. Correlation of electrocardiograms by diastolic pressure readings

| Diastolic pressure (mm. Hg.) | Total | ECG group ¹ | | | | | | | | |
|------------------------------|--------|------------------------|--------|-------|-------|-------|-------|-------|-------|-------|
| | | 1 | 2 | 3 | | | | | 4 | |
| | | | | Total | a | b | c | d | | e |
| Total | | | | | | | | | | |
| Total..... | 5, 803 | 2, 684 | 2, 587 | 493 | 31 | 250 | 36 | 99 | 77 | 39 |
| Under 50..... | 21 | 9 | 9 | 3 | ----- | 2 | ----- | 1 | ----- | ----- |
| 50-59..... | 101 | 53 | 38 | 9 | 1 | 5 | 1 | 1 | 1 | 1 |
| 60-69..... | 620 | 343 | 231 | 40 | 2 | 17 | 2 | 10 | 9 | 6 |
| 70-79..... | 1, 498 | 820 | 578 | 88 | 6 | 30 | 9 | 28 | 15 | 12 |
| 80-89..... | 1, 691 | 843 | 715 | 125 | 5 | 64 | 11 | 27 | 18 | 8 |
| 90-99..... | 1, 063 | 422 | 531 | 106 | 4 | 59 | 4 | 23 | 16 | 4 |
| 100-109..... | 472 | 131 | 269 | 66 | 8 | 34 | 7 | 4 | 13 | 6 |
| 110-119..... | 227 | 48 | 145 | 33 | 3 | 22 | 1 | 4 | 3 | 1 |
| 120 and over..... | 110 | 15 | 71 | 23 | 2 | 17 | 1 | 1 | 2 | 1 |
| Male | | | | | | | | | | |
| Total..... | 2, 530 | 1, 129 | 1, 167 | 216 | 17 | 75 | 20 | 55 | 49 | 18 |
| Under 50..... | 11 | 6 | 3 | 2 | ----- | 2 | ----- | ----- | ----- | ----- |
| 50-59..... | 33 | 16 | 15 | 1 | ----- | 1 | ----- | ----- | ----- | 1 |
| 60-69..... | 245 | 119 | 101 | 22 | 1 | 7 | 1 | 7 | 6 | 3 |
| 70-79..... | 628 | 338 | 246 | 38 | 2 | 8 | 3 | 15 | 10 | 6 |
| 80-89..... | 735 | 355 | 326 | 51 | 3 | 15 | 7 | 14 | 12 | 3 |
| 90-99..... | 480 | 198 | 235 | 45 | 2 | 15 | 4 | 15 | 9 | 2 |
| 100-109..... | 227 | 65 | 130 | 31 | 5 | 13 | 4 | ----- | 9 | 1 |
| 110-119..... | 118 | 28 | 73 | 16 | 2 | 9 | ----- | 3 | 2 | 1 |
| 120 and over..... | 53 | 4 | 38 | 10 | 2 | 5 | 1 | 1 | 1 | 1 |
| Female | | | | | | | | | | |
| Total..... | 3, 273 | 1, 555 | 1, 420 | 277 | 14 | 175 | 16 | 44 | 28 | 21 |
| Under 50..... | 10 | 3 | 6 | 1 | ----- | ----- | ----- | 1 | ----- | ----- |
| 50-59..... | 68 | 37 | 23 | 8 | 1 | 4 | 1 | 1 | 1 | ----- |
| 60-69..... | 375 | 224 | 130 | 18 | 1 | 10 | 1 | 3 | 3 | 3 |
| 70-79..... | 870 | 482 | 332 | 50 | 4 | 22 | 6 | 13 | 5 | 6 |
| 80-89..... | 956 | 488 | 389 | 74 | 2 | 49 | 4 | 13 | 6 | 5 |
| 90-99..... | 583 | 224 | 296 | 61 | 2 | 44 | ----- | 8 | 7 | 2 |
| 100-109..... | 245 | 66 | 139 | 35 | 3 | 21 | 3 | 4 | 4 | 5 |
| 110-119..... | 109 | 20 | 72 | 17 | 1 | 13 | 1 | 1 | 1 | ----- |
| 120 and over..... | 57 | 11 | 33 | 13 | ----- | 12 | ----- | ----- | 1 | ----- |

¹ See text for definitions of groups.

4.1 percent were in this group; at 50-59 years, 6.0 percent; and at 60 years or older, 16.1 percent.

Relation between ECG and blood pressure. The lowest rate of ECG disorders occurred at the 120-129 mm. Hg. systolic blood pressure level and at the 70-79 mm. Hg. diastolic pressure level (fig. 4, tables 3 and 4). The rate of disorders rose as blood pressure level increased, but the rate of disorders was also higher at very low blood pressure levels. This yielded a J-shaped curve both for the age group 40-59 years and 60 years and over. For subgroup 3b the trend of prevalence with increasing blood pressure was steeper than in the other subgroups (a, c, d, and e).

Summary

To investigate blood pressure and heart diseases, the Ministry of Health and Welfare of Japan undertook a survey of about 7,000 persons more than 40 years of age. The group was a national sample selected by a stratified two-stage sampling. Data were obtained from 82.8 percent of the sample through examinations, including blood pressure measurement, ECG's, general auscultation, inspection, and urine protein test for all males as well as a medical history. For each sex the age composition of the respondent group duplicated that of the general population of Japan. A special expert committee standardized the examination methods and techniques and instructed the technicians conducting the survey. Staff of the district health centers conducted the survey at the end of October 1962 under the auspices of the Ministry of Health and Welfare, each prefecture, and prefectural medical associations.

Readings of more than both 150 mm. Hg. in systolic blood pressure and 90 mm. Hg. of diastolic pressure were registered by 26.1 percent of the entire sample, with the percentages being greater in older age groups than in younger. Projected to the entire population of Japan, about 7,070,000 persons would have such readings.

The mean for the systolic blood pressure was 148.2 ± 28.3 mm. Hg. for men and 146.9 ± 30.3 mm. Hg. for women; there was no major difference by sex. The mean for the diastolic pressure readings was 86.4 ± 15.7 mm. Hg. for men and 84.7 ± 15.2 mm. Hg. for women, and again there was no sex difference. The mean and the spread of values increased with age in both sexes and in both systolic and diastolic pressures.

The correlation coefficient between systolic and diastolic pressures was +0.700, and there were no differences by sex.

Results of the urine protein test showed that 15.8 percent of men with systolic pressures over 150 mm. Hg. had positive test results, as contrasted with 5.3 percent at pressures under 150 mm. Hg. A similar relationship was found in diastolic pressures; 16.5 percent of men with diastolic pressures above 90 mm. Hg. had positive test results, in contrast to 5.8 percent with pressures under 90 mm. Hg.

Electrocardiographic disorders were found in 8.5 percent of the sample. There were no sex differences. The rate increased with age for both males and females. Projection to the population of Japan would indicate that about 2.3 million persons have such disorders. The lowest rate in ECG disorders occurred at the 120-129 mm. Hg. systolic level and the 70-79 mm. Hg. level for diastolic readings for all ages and both sexes.

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Program Notes



Chronic Respiratory Diseases

A bureau of chronic respiratory disease newly established in the New York State Department of Health is staffed with personnel of the department's discontinued bureau of tuberculosis casefinding. Dr. Hollis S. Ingraham, State Health Commissioner, in announcing the new bureau, said that the death rate in upstate New York from bronchitis, emphysema, asthma, and bronchiectasis had more than doubled between 1940 and 1960 in male residents.

Mississippi Study of Alcoholism

A special task group to study alcoholism as related to community health needs is one of six planning units scheduled to work with the recently created interagency Mississippi Mental Health Planning Council in a statewide mental health planning program.

New Type Housing for Aged

A new home for the aged which opened in 1964 on the Pine Ridge Indian Reservation in South Dakota features individual quarters with a communal dining hall and recreation facilities.

A cross between a home for the elderly and a boarding house, the Felix C. Cohen Memorial Home represents a new concept of communal public housing for the aged which the Public Housing Authority staff believes might be applied elsewhere. It might serve, they believe, as an alternative to the loneliness of isolated rooms for some of our cities' old people.

Residents pay \$75 a month for food, lodging, laundry, and other services. Of this, \$30 goes to the housing authority for rent and \$45 to the Settlement House, a nonprofit group that provides the meals, furnishings, and special staff.

The major problem in starting such a congregate housing project,

said Ralph Reeser, PHA attorney, is finding an agency that will guarantee to supply the meals. Individual living habits and needs of old people may also present problems.—*Washington Post*, Sept. 31, 1964.

More Alcoholic Patients

In 1963, for the second year in a row, more patients were admitted to Maryland's psychiatric hospitals for alcoholism than for any other diagnosis. In 1962, 28.6 percent (1,502) of the admissions were for alcoholism; in 1963, 30.4 percent (2,188), according to the *Maryland Department of Mental Hygiene Statistics Newsletter* V-3.

Psychiatric Day-Night Units

Some 300 psychiatric day-night units are estimated to be in operation in the United States, either independently or in affiliation with hospitals, outpatient clinics, and other community resources. In each a psychiatrist is present on a regularly scheduled basis.

Conference on Oceanography

In early 1964 California held the first State-sponsored oceanographic conference in the United States. The meeting anticipated the International Hydrological Decade for which plans are underway under the auspices of UNESCO and other agencies. California is vitally interested in water resources since much of its fresh water must be imported or produced by desalinization of sea water.

Women Alcoholics

One of every four persons seeking care at the Danville (Pa.) State Hospital Alcoholic Rehabilitation Unit in recent months has been a woman. Formerly, the ratio was one woman to five men (also the national ratio). Dr. Charles L. Wilbar, Jr., State Health Secretary,

attributes the change mainly to "the understanding and public acceptance of alcoholism as a disease."

Fewer Midwives

Florida's midwife population decreased to 200 in 1963 for the first time in the State's history. The steady increase of hospital deliveries by physicians has reduced the need for midwives to the point where they deliver only about 4 percent of all infants born in the State, according to Enid Mathison, director of the division of public health nursing, Florida State Board of Health.

Certifying Shellfish Imports

U.S. Public Health Service certification of shellfish imported into Maryland is required under a State law that went into effect in June 1964.

Under the new law, local health department sanitarians have begun conducting periodic investigations among retail stores and distributors to see that imported stocks are so certified. They have removed from sale several shipments not on the approved list.

Violators of the law may be subject to a fine of not more than \$500 for each offense.

Increased Use of FA Technique

The West Virginia Department of Health's hygienic laboratory offers physicians throughout the State a service of typing streptococcal infections based on the rapid (typing time 24-48 hours) FA (fluorescent antibody) process. If technicians find that a specimen a physician has sent in is positive, they call the local health department, which notifies the physician.

The Illinois Department of Public Health has substituted the FA technique for the mouse inoculation test for rabies on routine specimens.

Items for this page: Health departments, health agencies, and others are invited to share their program successes with others by contributing items for brief mention on this page. Flag them for "Program Notes" and address as indicated in masthead.